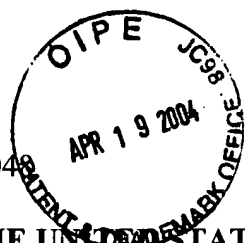


Image



AF #
2853

Docket No.: 50059-048

PATENT

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of	:	Customer Number: 20277
Hideo SAMURA	:	Confirmation Number: 7482
Serial No.: 09/343,092	:	Group Art Unit: 2853
Filed: June 30, 1999	:	Examiner: J. Nguyen
For: HEAD FOR INK-JET PRINTER HAVING PIEZOELECTRIC ELEMENTS PROVIDED FOR EACH INK NOZZLE		

TRANSMITTAL OF APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Submitted herewith in triplicate is Appellant's Appeal Brief in support of the Notice of Appeal filed March 2, 2004. Please charge the Appeal Brief fee of \$330.00 to Deposit Account 500417.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

MCDERMOTT, WILL & EMERY

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APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This Appeal Brief is submitted in support of the Notice of Appeal filed March 2, 2004.

REAL PARTY IN INTEREST

The real party in interest is Canon Kabushiki Kaisha of 30-2, Shimomaruku 3-Chome, Ohta-ku,
Tokyo 146-8501, JAPAN.

RELATED APPEALS AND INTERFERENCES

Appellant is unaware of any related appeals and/or interferences.

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STATUS OF CLAIMS

Claims 1, 4-7, and 11-12 stand finally rejected. It is from the final rejections of these claims that this Appeal is taken.

STATUS OF AMENDMENTS

There are no outstanding amendments.

SUMMARY OF INVENTION

In one aspect, the invention relates to a head for ink-jet printer comprising a silicon substrate (1) on which a plurality of ink nozzles (5) and a plurality of ink passages (6) each communicating separately to each of the ink nozzles are processed finely using a plasma etching method (see, e.g., Figs. 1 and 2; page 7, lines 13-23; page 8, lines 23-24). An inorganic substrate (2) is joined with the silicon substrate and includes ink chambers (7), each communicating separately to each of the ink passages (6) (see, e.g., Figs. 1 and 2; page 7, line 24 to page 8, line 5). A piezoelectric element (4) of ferroelectric substance (8) is provided for changing separately a capacity of each of the ink chambers (7) to jet an ink from the ink nozzles (5) through the ink chambers (7) (see, e.g., page 7, lines 15-20 and page 8, lines 17-22). In accord with the invention, ink passages (6) are fine, as compared with the ink chambers (7), and ink nozzles (5) are fine, as compared with ink passages (5) (see, e.g., Fig. 1; page 8, lines 23-24; page 10, lines 22-24; page 13, lines 15-23).

ISSUE

Whether the obviousness rejection of claims 1, 4-7, 11 and 12 under 35 U.S.C. § 103(a) over **Kitahara et al.** (U.S. Patent No. 6,290,340) in view of **Sugitani et al.** (U.S. Patent No. 4,611,219) is proper.

GROUPING OF CLAIMS

Claims 1, 4, 7 and 11 stand or fall together. Claims 5-6 stand or fall separately from the remaining claims. Claim 12 stands or falls separately from the remaining claims.

THE ARGUMENT

Kitahara et al. are alleged to teach a head for an ink-jet printer comprising a substrate 42, on which are provided a plurality of ink nozzles 54 and a plurality of ink passages 56 each communicating separately to each of the ink nozzles, and an inorganic substrate which is joined to substrate 42 and provided with ink chambers 46 each communicating separately to each of the ink passages. **Kitahara et al.** are also said to teach a piezoelectric element of ferroelectric substance (col. 9, lines 5,6) for changing separately a capacity of each of the ink chambers to jet an ink from the ink nozzles 54 through the ink chambers 46. The ink passages 56 are said to be fine as compared with the ink chambers 46 and the ink nozzles are fine as compared with the ink passages (citing Fig. 1).

Sugitani et al. are cited for the teaching that a substrate can be a silicon substrate (citing col. 3, lines 22-23) able to be processed finely using a plasma etching method (citing col. 3, line 27).

1. NOT EVERY CLAIM LIMITATION OF CLAIMS 1, 4-7, 11-12 TAUGHT OR SUGGESTED

Kitahara et al. teach that the material used for plates 48, 50, and 52 are “preferably made of a plastic, or a metal such as nickel or stainless steel . . . orifices 58 . . . desirably formed in a tapered shape” (col. 6, lines 10-21). **Kitahara et al.** teach that the nozzles are formed in the plates by a press (see col. 15, lines 28-39).

Sugitani et al. teach that “plates 5, 11, 12, and 14 can be formed from any material suitably selected from silicon, glass, ceramics, plastics, and metals” wherein the perforations “can be

accomplished by various methods including drilling, molding, punching, etching, a method that photoresist is image-exposed and developed, followed by removing the portions corresponding to the perforations and openings by dissolution” (col. 3, lines 22-30).

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981 (CCPA 1974). “All words in a claim must be considered in judging the patentability of that claim against the prior art”. *In re Wilson*, 424 F.2d 1382, 1385 (CCPA 1970); *see also In re Ochiai*, 71 F.3d 1565, 1572 (Fed. Cir. 1995)(*stating* “[w]hen evaluating the scope of a claim, every limitation in the claim must be considered”). Appellant submits that the claim terminology “plasma etching” was improperly disregarded by Examiner Dickens. This plasma etching, and the structure implied thereby and flowing therefrom, serve as potent evidence of non-obviousness over the applied references.

First, Appellant submits that the “etching” described in **Sugitani et al.** is a *chemical etching*, not a plasma etching. **Sugitani et al.** note that the formation of the perforations and openings in the plates 5, 11, 12 and 14 can be accomplished by “drilling, molding, punching, etching” wherein the etching involves “removing the portions corresponding to the perforations and openings by dissolution” (col. 3, lines 22-30). This reference to “dissolution” is repeated in col. 4, lines 35-44. Conventional dictionaries define “dissolution” as “1: the act or process of dissolving: as a separation into component parts . . . c: termination or destruction by breaking down, disrupting, or dispersing . . . e : liquefaction” (Merriam-Webster, 2004 ed.). Thus, **Sugitani et al.** do not explicitly or inherently disclose or suggest micro-fabrication of nozzles by *plasma etching*. Appellant submits that the combination of **Sugitani et al.** and **Kitahara et al.** do not teach or suggest micro-fabrication of nozzles by plasma etching to provide the claimed “plurality of ink nozzles and a plurality of ink passages each communicating separately to each of the ink nozzles are processed finely using a plasma etching method”.

Second, Appellant submits that this distinction is material. As noted in Appellant's disclosure, the prior art ink jet head formation techniques utilize *chemical etching* to form ink jet heads with 6 ink nozzles per head (see page 13, lines 15-17). In contrast, the claimed ink jet head is formed using *plasma etching*, which permits greater density and yields a head with 30 ink nozzles per head (see page 13, lines 17-19). Plasma etching provides increased anisotropy over purely chemical etching. This anisotropy is a recognizable and tangible physical or structural result not typical of conventional chemical etching. Thus, Appellant submits that the claimed "silicon substrate on which a plurality of ink nozzles and a plurality of ink passages each communicating separately to each of the ink nozzles are processed finely using a plasma etching method" yields ink nozzles which are structurally distinguishable from ink nozzles formed by chemical etching, such as is conventionally performed (see page 13, lines 15-17). For this reason, Appellant submits that the processing-related language in the claim is relevant to the structure of the claimed invention and should not have been disregarded by Examiner Dickens.

It is accordingly submitted that every claim limitation has not been shown to be taught or suggested by **Sugitani et al.** nor **Kitahara et al.**, singly or in combination, and that a *prima facie* case of obviousness has not been set forth by the Examiner.

2. NOT EVERY CLAIM LIMITATION OF CLAIMS 5-6 TAUGHT OR SUGGESTED

Kitahara et al. are alleged to teach "said silicon substrate has a construction in which plural silicon substrates are laminated and wherein said ink nozzles and said ink passages are communicated by laminating the silicon substrate in which said ink nozzles are processed and the silicon substrate in which said ink passages are processed" (citing col. 6, lines 50-68)(see last paragraph of page 3 in the Final Office Action). Appellant strongly traverses this assertion. **Kitahara et al.** set forth absolutely no teaching or suggestion of a silicon substrate having a construction "in which plural silicon substrates

are laminated and wherein said ink nozzles and said ink passages are communicated by laminating the silicon substrate in which said ink nozzles are processed and the silicon substrate in which said ink passages are processed”. First, the portion of **Kitahara et al.** cited by Examiner Dickens relates to the “pressure generating unit 44”, not the flow path unit 42 which comprises the ink nozzles and ink passages, and is therefore largely irrelevant. Second, the Examiner ignores the failure of **Kitahara et al.** to disclose lamination in the context of the flow path unit 42. Third, **Kitahara et al.** do not teach or suggest a silicon substrate, let alone plural silicon substrates.

Kitahara et al. teach a pressure generating unit formed by lamination, stating “each of the piezoelectric transducers 78 has a piezoelectric/electrostrictive unit consisting of a lower electrode 77, a piezoelectric/electrostrictive layer 79, and an upper electrode 75, which are formed in lamination on a closure plate 66, by a suitable film-forming method.” (col. 7, lines 53-62). However, **Kitahara et al.** describe formation of the flow path unit 42, comprising nozzle plate 48, orifice plate 50, and channel plate 52 (each of these components being formed from a plastic or metal) using an adhesive (see, e.g., col. 10, lines 4-39). **Kitihara et al.** state that “while the material used for the plates . . . of the flow path 42 is not particularly limited, these plates 48, 50, 52 are preferably made of a plastic, or a metal such as nickel or stainless steel, which enables the nozzles 54 and orifices 58 to be formed in the respective plates 48, 50 with high accuracy” (col. 6, lines 10-15). **Kitihara et al.** go on to disclose an embodiment wherein “nozzle plate 169 are prepared using metal plates . . . formed by forming through holes 168, which correspond to the nozzle openings 131, in the metal plate on the press” (col. 15, lines 28-39). This nozzle plate (e.g., 48) and the orifice plate 50 “are integrally bonded to the channel plate 52 by means of an adhesive” (col. 5, lines 54-56).

Sugitani et al. likewise state that “[a]fter the plate 405 thus prepared is superposed and positioned on the base plate 401, the plate 405 is closely fixed to the base plate 401 with an adhesive,

screws, or the like” (col. 4, lines 41-44). **Sugitani et al.** go on to state that the plates forming the flow path (e.g., plates 405, 408; Fig. 4) are “securely fastened together with an adhesive, screws, or the like” (col. 4, lines 61-64).

Sugitani et al.’s mere mention of silicon is submitted to be insufficient in combination with **Kitihara et al.** to support a *prima facie* conclusion of obviousness as to the claimed structure which requires “a silicon substrate on which a plurality of ink nozzles and a plurality of ink passages” are formed, the silicon substrate having a construction “in which plural silicon substrates are laminated” (claim 5) or wherein “said ink nozzles and said ink passages are communicated by laminating the silicon substrate in which said ink nozzles are processed and the silicon substrate in which said ink passages are processed” (claim 6).

Appellant submits that Examiner Dickens has not shown the combination of **Sugitani et al.** and **Kitihara et al.** teach or suggest laminated silicon substrates bearing a plurality of ink nozzles and a plurality of ink passages in the manner claimed. The failure of both references to teach or suggest the claimed laminated structure is potent evidence of non-obviousness, as all of the claim limitations must be taught or suggested by the prior art. *In re Royka, supra*. Moreover, to the extent that Examiner Dickens, or presently Examiner Nguyen, may attempt to rely on equivalence as a rationale supporting an obviousness rejection, Appellant submits that equivalence may only be relied upon as a rationale supporting an obviousness rejection when the equivalence is recognized in the prior art. Equivalency cannot be based on Appellant’s disclosure or the mere fact that the components at issue may be functional or mechanical equivalents (which has not been established). *In re Ruff*, 256 F.2d 590 (CCPA 1958). Appellant submits that the combination of **Sugitani et al.** and **Kitihara et al.** do not reasonably support such finding of equivalence.

It is accordingly submitted that every claim limitation has not been shown to be taught or

suggested by **Sugitani et al.** nor **Kitahara et al.**, singly or in combination, and that a *prima facie* case of obviousness has not been set forth by the Examiner.

3. NOT EVERY CLAIM LIMITATION OF CLAIM 12 IS TAUGHT OR SUGGESTED

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981 (CCPA 1974). The question of whether a claim limitation is within the level of ordinary skill in the art, whether such assertion is explicit or implied, is not a sufficient basis for concluding that the claimed subject matter would have been obvious under 35 U.S.C. § 103. That which is within the capabilities of one skilled in the art is not synonymous with obviousness. *Ex parte Gerlach*, 212 USPQ 471 (Bd. App. 1980); *Panduit Corp. v. Dennison Mfg. Co.*, 774 F.2d 1082, 1092 fn.16 (Fed. Cir. 1985). Instead, a *prima facie* case of obviousness requires the Examiner to present evidence, preferably in the form of some teaching, suggestion, incentive or inference in the applied prior art, or in the form of generally available knowledge at the time of the invention, that would have led one of ordinary skill in the art to combine the relevant teachings in the proposed manner to arrive at the claimed invention. *See, e.g., Ex parte Levensgood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993); *Carella v. Starlight Archery*, 804 F.2d 135 (Fed. Cir. 1986).

Appellant respectfully submits that Examiner Dicken's has failed to establish a *prima facie* case of obviousness of claim 12 for the reasons discussed below.

A. CLAIM 12 IS NOT TAUGHT OR SUGGESTED BY THE APPLIED ART

Examiner Dickens acknowledges that neither **Kitahara et al.** nor **Sugitani et al.** expressly teach an ink nozzle pitch of 20 μm (claim 12).

Examiner Dicken's alleges that one of ordinary skill in the art would (1) look to **Kitahara et al.** and conclude that **Kitahara et al.**'s teaching of tapered nozzles (col. 6, lines 15-21)

serves to “better facilitate flow” in an output direction; (2) conclude from **Kitahara et al.**'s teaching of tapered nozzles that spacing the nozzles closes together would “better facilitate flow”; and (3) provide the claimed spacing of nozzles to “better facilitate flow”. Examiner Dickens relies upon her own correlation between tapered nozzles and better ink flow to conclude that “[i]t would have been obvious to one having ordinary skill in the art . . . to have a pitch of the ink nozzles is approximately 20 μ m in the modified **Kitahara et al.** for the purpose to better facilitate flow” (see page 3, lines 13-17 of Final Office Action). Examiner Dickens admits that she is not relying upon Official Notice to fill the factual deficiencies of **Kitahara et al.** and **Sugitani et al.** (see page 7, lines 19-21 of Final Office Action) and insists that the her correlation is plainly suggested in the applied art. Therefore, **Kitahara et al.** and **Sugitani et al.** must be examined for what they would have suggested to one of ordinary skill in the art at the time of the invention.

Examiner Dickens relies upon **Kitahara et al.** for a suggestion of the claimed ink nozzle spacing. **Kitahara et al.** state “[e]ach of the orifices 58 is desirably formed in tapered shape such that the diameter of the orifice 58 is reduced in the direction of flow of the ink (i.e., the direction from the ink supply channel 62 toward the ink pressure chambers 46), as shown in FIG. 1 by way of example, so as to function as a check valve for inhibiting the ink from flowing in the reverse direction.” (col. 6, lines 15-21). **Kitahara et al.** teach that reducing the diameter of the orifice 58 inhibits reverse flow (col. 6, lines 15-21).

Kitahara et al. do not discuss “spacing” or “pitch” of the ink nozzles. Moreover, **Kitahara et al.** do not teach or suggest that reducing the diameter of the orifice 58 “better facilitate[s] flow” in an output direction, as theorized by Examiner Dickens. The only nexus between the claimed nozzle spacing and **Kitahara et al.** is Examiner Dicken’s conclusory allegation that **Kitahara et al.** is “suggestive of the claimed limitation”.

Kitahara et al.'s figures, which must be evaluated for what they reasonably disclose and suggest to one of ordinary skill in the art in accord with *In re Aslanian*, 590 F.2d 911 (CCPA 1979), similarly fail to support the Examiner's allegation that **Kitahara et al.** is "suggestive of the claimed limitation". See also *In re Wright*, 569 F.2d 1124 (CCPA 1977)(*holding* "the description of the article pictured can be relied on, in combination with the drawings, for what they would reasonably teach one of ordinary skill in the art"). Figures 8-9 of **Kitahara et al.** depict a spacer 100 having a thickness of 150 μm , a closure plate 104 having a thickness of 10 μm , and a channel plate 120 having a thickness of 150 μm (see col. 11, line 58 to col. 12, line 48). A rough comparison of the thicknesses of these components (100, 104, 120) to the pitch of the ink nozzle openings 131 shows that the pitch between the ink nozzle openings is far greater than the claimed value of "approximately 20 μm ".

In view of the above, Appellant respectfully submits that one of ordinary skill in the art would not have found **Kitahara et al.** "suggestive of the claimed limitation", as alleged by Examiner Dickens, and submits that the Examiner has failed to establish *prima facie* obviousness of a claimed invention for want of a showing that all of the claim limitations are taught or suggested by the prior art. *In re Royka*, 490 F.2d 981 (CCPA 1974).

B. THE REFERENCES TEACH AWAY FROM THE EXAMINER'S CONCLUSIONS

Sugitani et al. teach that smaller flow diameters *increase* resistance, noting "expanded widths . . . having much decreased resistance to ink flow" and "liquid paths having reduced flow resistance can be disposed in lower density" (col. 6, lines 3-17)). Thus **Sugitani et al.** explicitly teach away from Examiner Dicken's conclusion that decreasing the area of the ink passage (e.g., ink nozzle) would necessarily "better facilitate flow". Such evidence of teaching away constitutes evidence of non-obviousness. *In re Bell*, 991 F.2d 781, 26 USPQ2d 1529 (Fed. Cir. 1993); *Specialty Composites v. Cabot Corp.*, 845 F.2d 981, 6 USPQ2d 1601 (Fed. Cir. 1988); *In re Hedges*, 783 F.2d 1038, 228 USPQ

685 (Fed. Cir. 1986); *W. L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983); *In re Marshall*, 578 F.2d 301, 198 USPQ 344 (CCPA 1978).

A *prima facie* case of obviousness may be rebutted by showing that the art, in *any* material respect, teaches away from the claimed invention. *In re Geisler*, 116 F.3d 1465, 1471 (Fed. Cir. 1997). Appellant submits that the motivation for modification of the references proffered by Examiner Dicken's, upon which her conclusion of *prima facie* case obviousness is based, is rebutted by the teachings of **Sugitani et al.** **Sugitani et al.** provides a high density line head , but do not have tapered orifices. As with every engineering problem, there are numerous, often competing variables that must all be carefully balanced in view of a desired goal. The Examiner points to one possible variable (i.e., check valve function of a restricted orifice), but such variation of one variable cannot fairly be said to "better facilitate flow" as a whole. As recognized in **Sugitani et al.**, decreased flow areas increase friction, which inhibit flow. The Examiner incongruously contends that such inhibition of flow better facilitates flow.

Appellant respectfully submits that Examiner Dicken's statement that "better flow facilitation is met when there is a check valve for inhibiting the ink from flowing in the reverse direction" (see Final Office Action, page 7, lines 10-12) is a specious justification for her prior conclusion of obviousness which improperly ignores teachings of the applied references which mitigate against a *prima facie* finding of obviousness.

C. THE REFERENCES DO NOT TEACH CLAIM 12 "AS A WHOLE"

The requisite motivation to support the ultimate legal conclusion of obviousness under 35 U.S.C. §103 is not an abstract concept, but must stem from the applied prior art *as a whole* and must have realistically impelled one having ordinary skill in the art to modify a specific reference in a

specific manner to arrive at a specifically-claimed invention. *In re Newell*, 891 F.2d 899, 13 USPQ2d 1248 (Fed. Cir. 1989).

Appellant respectfully submits that Examiner Dicken's conclusion that **Kitahara et al.**'s teaching of nozzle tapering would directly suggest a decreased ink nozzles pitch "as a whole" (see page 6, line 21 to page 7, line 22 of Final Office Action) is without merit, factual predicate, or logic.

The only connection between the claimed recitation of nozzle spacing and **Kitahara et al.** is Examiner Dicken's allegation that **Kitahara et al.**'s teaching of tapered nozzles is "suggestive of the claimed limitation". As noted above, **Kitahara et al.** do not mention "spacing" or "pitch", nor do **Kitahara et al.**'s, in combination with the specification description, suggest the claimed pitch. The fact that **Kitahara et al.** teach tapered nozzles is completely irrelevant to the issue of nozzle spacing or pitch. **Sugitani et al.**, although including statements indicating that "an object of this invention is to provide a small-sized liquid-jetting head having compacted multi-orifices" (col. 1, lines 62-64), fail to disclose the claimed ink nozzle pitch (as acknowledged by Examiner Dickens). **Sugitani et al.** also fail to support the Examiner's contention that decreased ink nozzle pitch "better facilitates flow".

Although a prior art device "may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so." See *In re Fritch*, 972 F.2d 1260 (Fed. Cir. 1992). Appellant would stress that the Examiner must show reasons why a skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed. *In re Rouffet*, 149 F.3d 1350, 47 USPQ2d 1453 (Fed. Cir. 1998). The showing must be clear and particular. See, e.g., *In re Dembiczak*, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999); *C.R. Bard, Inc. v. M3 Sys., Inc.*, 157 F.3d 1340, 1352 (Fed. Cir. 1998).

The only teaching or suggestion of the claimed ink nozzle pitch is found within the Appellant's disclosure, which discloses that conventional line heads or print heads have a line spacing on the order of 300 μm which provides a poor reproducibility of the original image, whereas the claimed pitch of the ink nozzles is "approximately 20 μm " (see, e.g., page 3, lines 6-10; page 7, lines 23-24; page 8, lines 20-22; and page 13, lines 15-23 of Appellant's disclosure). Appellant teaches that this spacing, which is made possible by the structure and processing of the disclosed and claimed line head, permits "a printing of high density and high quality, capable of achieving a high productivity with a simple construction, and capable of printing with multicolor inks (five colors or more)". *Id.* at page 3, line 21 to page 4, line 1. Any reliance on Appellant's disclosure by the Examiner to support the rejection is improper. "It is impermissible to use the claimed invention as an instruction manual or 'template' to piece together the teachings of the prior art so that the claimed invention is rendered obvious." *In re Fritch*, 23 USPQ2d 1780 (Fed. Cir. 1992).

Appellant respectfully submits that the Examiner has not discharged the legal burden of demonstrating that **Kitahara et al.** and **Sugitani et al.** teach or suggest the invention "as a whole".

4. THE OBVIOUSNESS REJECTION OF CLAIM 12 IS IMPROPER

Appellant also takes issue with Examiner Dicken's argument that "[s]ince the Examiner has provided a rationale for the combination, the rejection is deemed to be proper".

Appellant submits that Examiner Dicken's position constitutes legal error. The ultimate determination on patentability is made on the entire record. *In re Oetiker*, 977 F.2d 1443, 1446 (Fed. Cir. 1992). As part of this determination, Examiner's must consider rebuttal arguments and evidence. *See, e.g., In re Soni*, 54 F.3d 746, 750 (Fed. Cir. 1995); *In re Alton*, 76 F.3d 1168 (Fed. Cir. 1996). "A determination under 35 U.S.C. § 103 should rest on all evidence and should not be influenced by any earlier conclusion." *See, e.g., In re Piasecki*, 745 F.2d 1468, 1474 (Fed. Cir. 1984). "Facts established

by rebuttal evidence must be evaluated along with the facts on which the conclusion of a prima facie case was reached, not against the conclusion itself.” *In re Eli Lilly*, 902 F.2d 943 (Fed. Cir. 1990)(emphasis added).

In the Request for Reconsideration filed September 2, 2003, Appellant disputed Examiner Dicken’s conclusion of *prima facie* obviousness. Although Appellant was under no obligation to submit evidence of nonobviousness in view of the Examiner’s failure to demonstrate a teaching or suggestion of the claimed feature in the applied combination of **Kitahara et al.** and **Sugitani et al.**, Appellant submitted extensive remarks setting forth the logical and factual deficiencies in Examiner Dicken’s line of reasoning as well as disputing any evidence of any teaching or suggestion of the claimed feature in the applied references (see, e.g., pages 5-7) to expedite prosecution.

Examiner Dicken’s Final Office Action responds to Appellant’s remarks and evidence with boilerplate case cites and a conclusion that “[s]ince . . . a rationale for the combination” was provided, “the rejection is deemed to be proper”. Examiner Dicken’s response fails to address and evaluate the facts presented and merely justifies her prior conclusion by stating that “better flow facilitation is met when there is a check valve for inhibiting the ink from flowing in the reverse direction”.

The teaching, motivation or suggestion to combine may be implicit from the prior art as a whole, rather than expressly stated in the references. The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to one of ordinary skill in the art. *In re Keller*, 642 F.2d 413, 425 (CCPA 1981). Appellant submits that the record presents nothing more than isolated conclusory statements regarding the obviousness of the subject matter of claim 12. Broad conclusory statements, standing alone, are not “evidence” supportive of a *prima facie* showing. *In re Dembiczak*, 173 F.3d, 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999); *McElmurry v. Arkansas Power & Light Co.*, 995

F.2d 1576, 1578 (Fed. Cir. 1993). Appellant respectfully submits that Examiner Dicken's obviousness rejection, predicated upon implicit reasoning of **Kitahara et al.** and/or **Sugitani et al.**, fails to set forth "particular factual findings related thereto" on which this Honorable Board could properly affirm a finding of obviousness. See *In re Dembiczak*, 173 F.3d at 999, *In re Kotzab*, 217 F.3d at 1370.

Appellant further submits that Examiner Dickens committed legal error in failing to consider the obviousness of the claimed invention in view of all evidence of record, rather than on her previous conclusion. The Examiner's "motivation" rationale contravenes established patent law principles and must be viewed as an impermissible hindsight reconstruction rather than as an effective *prima facie* case of obviousness. Prior art references must be considered as a whole. E.g. *In re Hedges*, 228 USPQ 685, 687 (Fed. Cir. 1986). If the Examiner engages in picking and choosing from the references only so much as supports the rejection and ignores express teachings to the contrary in those references as well as arguments demonstrating the errors in the Examiner's reasoning and conclusions, such as noted in the preceding sections, the Examiner commits legal error. *Id.*

CONCLUSION

Based upon the foregoing, Appellant submits that a *prima facie* basis to deny patentability to the claimed invention under 35 U.S.C. §103 has not been established for lack of the requisite facts and realistic motivation. Appellant, therefore, respectfully submits that the imposed rejection of claims 1, 4-7 and 11-12 under 35 U.S.C. §103 for obviousness predicated upon the combination of **Kitahara et al.** and **Sugitani et al.** is not factually or legally viable.

PRAYER FOR RELIEF

Appellant respectfully submits that the previously argued shortcomings in the objective evidence presented by the Examiner underscores the lack of a factual basis and want of the requisite realistic motivation to generate a *prima facie* basis to deny patentability to any of the claims under 35 U.S.C. §103. Appellant, therefore, respectfully solicits this Honorable Board to reverse the Examiner's rejection under 35 U.S.C. §103.

Respectfully submitted,

MCDERMOTT, WILL & EMERY

A handwritten signature in black ink, appearing to read "William D. Pegg".

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APPENDIX

1. A head for ink-jet printer comprising:

a silicon substrate on which a plurality of ink nozzles and a plurality of ink passages each communicating separately to each of the ink nozzles are processed finely using a plasma etching method;

an inorganic substrate which is joined with said silicon substrate and is provided with ink chambers each communicating separately to each of the ink passages; and

a piezoelectric element of ferroelectric substance for changing separately a capacity of each of the ink chambers to jet an ink from said ink nozzles through said ink chambers;

wherein said ink passages are fine as compared with said ink chambers and said ink nozzles are fine as compared with said ink passages.

4. The head for ink-jet printer according to claim 1, wherein said ink nozzles have tapered configurations.

5. The head for ink-jet printer according to claim 1, wherein said silicon substrate has a construction in which plural silicon substrates are laminated.

6. The head for ink-jet printer according to claim 5, wherein said ink nozzles and said ink passages are communicated by laminating the silicon substrate in which said ink nozzles are processed and the silicon substrate in which said ink passages are processed.

7. The head for ink-jet printer comprising:

the head for ink-jet printer as defined in claim 1; and

an ink tank for storing ink supplied to said ink chambers of said printer head.

11. A head for ink-jet printer according to claim 1, wherein said ink passages have a cross-sectional area less than a cross-sectional area of said ink chambers, and wherein said ink nozzles have a cross-sectional area less than a cross-sectional area of said ink passages.

12. A head for ink-jet printer according to claim 1, wherein a pitch of the ink nozzles is approximately 20 μm .